

SUMMARY OF COMPUTER RESOURCE USAGE

* Cor = Core Research and Development
C = Collaborative
S = Service
T = Training

April 17, 1971 - April 16, 1972

(101)

INVESTIGATOR		DEPARTMENT/ INSTITUTION	PROJECT TITLE	DIRECT GRANT OR CONTRACT SUPPORT		BRR Cate- gory*	AMOUNT OF USAGE - TIME SHARING COMPUTER	
Category 4 (cont'd.)		Medical Students (FREE)		Identification Number	Agency	Current Annual Amt.	Terminal Access Hours	Block Storage (K) (Block=2K Bytes)
							@ \$.01 per page/minute	@ \$.10 per block
Calvert, James	Student	TEXT. Solving the economic problem of medical research funds allocation; one criterion: change in mortality rate.					18.6	3.992
Cavalli, Luca	Genetics	HUMGEN. Classwork for course in human genetics.					124.1	36.797
Chester, Thomas	Student	PLAQUE. Anti-tumor immune responsive effects of <u>interferon</u> and <u>interferon</u> inducers.					79.1	29.607
Chiampì, Nona	Student	MEMESTIA. Calculation of enzyme activities and carbohydrate content of cell fractions.					2.9	0.768
Chu, Fred	Student	OMRI. Automatic recognition of cardiac arrhythmias on monitored patients.					1.9	0.507
Corby, James	Student	HURRY. Relationship between attention and enhancement of average evoked response (AER) magnitude.					20.4	6.130
Dimsdale, Joel	Student	GETPEACE. Characterization of goals in psychiatric wards and ward pressures on patients and staff to conform to the goals.					83.6	25.430
Dubovy, Ronald	Student	TURTLE. Enzyme changes in the skeletal muscles of chronically exercised rats.					7.1	3.142
Enzmann, Dieter	Student	SWALLOW. Determination of secondary peristalsis of the <u>esophagus</u> .					137.6	54.299
Feldman, Gary	Student	ASTHMA. Monitoring of airway resistance values during sessions with <u>asthmatic</u> patients and normal subjects.					0.0	0.0
Filman, David	Student	NEURON. Neural network model: rotation of visual pattern in accordance with vestibular input.					1.4	0.300
Funk, Glenn	Student	RHINO. Study of <u>rhinoviruses</u> .					0.7	0.161
Gamel, John	Student	DOGLAB. Indicator dilution techniques for measuring <u>pulmonary</u> blood flow and lung transfer function.					0.1	0.019
Gelfand, Michael	Student	CARCAT. On-line analysis of <u>cardiac</u> catheterization data.					0.0	0.0
Gleason, Curtis	Student	CORTMEAS. Study of transmembrane currents as a function of depth of <u>brain</u> cortex.					0.0	0.0
Gordon, Louis	Student	CONFID. Monte Carlo study of the characteristics of the Hartigan subsampling method for generating <u>confidence intervals</u> .					7.0	4.044

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			Identification Number	Agency		Terminal Access Hours	Page-minutes (M) Paging-minutes (M)	
Category 4 (cont'd)	Medical Students (FREE)						@ \$.01 per page-minute	@ \$.10 per block
Hahn, Peter	Student	OXYTOX. Interpretation, quantification, and systematic retrieval of information from gel electrophoreses.			T	6.8	4.073	0.418
Harris, Robert	Student	PMP. Correlation of subjects' emotions with their appraisals of certain aspects of their environments.			T	0.0	0.0	2.552
Helikson, Mary	Student	LBF. Measure of liver blood flow in dogs by radioisotope disappearance and electromagnetic flow meter determination.			T	36.8	22.880	0.946
Jacobs, Beverly	Student	COMPUTE. Thesis research project on mechanism of insulin action.			T	44.6	13.792	0.668
Jan, Wesley	Student	NOMAN. Information processing, storage, retrieval and display for students' research on enumerating a minor cell population by fluorescent techniques.			T	142.4	51.848	2.405
Lenssen, Barbara	Student	INFANTS. Analysis of data for doctoral dissertation on infants' fear of strangers.			T	15.8	3.632	0.030
Lewine, Rodney	Student	CPS. Clarification of mechanisms of pyrimidine synthesis in mammals and the relationship of that synthesis to the control of cellular proliferation.			T	48.1	26.509	3.926
Lipp, Martin	Student	MEDEPOT. Survey of marijuana use among medical personnel.			T	19.9	6.382	17.968
Masover, Gerald	Student	MYCOPLAS. Amino acid analysis of media used for growth of mycoplasma and tissue culture cells.			T	12.7	3.450	0.023
Miller, Craig	Student	CAB. Development of risk/benefit guidelines for saphenous vein - coronary artery bypass surgery.			T	26.1	17.646	0.366
Miller, Stephen	Student	LEARN. Analysis of data from an ANGER scintillation camera in connection with kidney blood flow studies; computer diagnosis of liver and cardiac disease.			T	53.9	29.779	7.467
Mischak, Ronald	Student	HISTOCOM. Evaluation of data from gamma counter on per cent cytotoxicity in cell suspensions exposed to a variety of developed antisera against thymus and brain determinants.			T	0.1	0.023	0.016
Mobley, William	Student	NEICOMED. Statistical analysis for thesis project on proteins; storage of research notes and data, edited class notes and references.			T	0.2	0.048	0.004

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April 17, 1971 - April 16, 1972

(103)

INVESTIGATOR	DEPARTMENT/ INSTITUTION	PROJECT TITLE	DIRECT GRANT OR CONTRACT SUPPORT		BRR Category	AMOUNT OF USAGE - TIME SHARING CENTER		
			Identification Number	Agency		Terminal Access Hours	Page-minutes/K (Block=24 bytes)	Block Storage/K
Category 4 (cont'd.)	Medical Students (FREE)						@ \$.01 per page-minute	@ \$.10 per block
Keff, Nicola	Student	POLYRIBO. Extraction of polyribosomes and ribosomes from human fibroblast cells in culture to determine relative proportions and quantify throughout cell life culture.			T	19.5	10.027	0.358
Nestor, Larry	Student	DIFFDX. Establishment of computer program to aid in differential diagnosis.			T	66.3	33.686	1.545
Kola, Gaston	Student	DIGMT. Effects of several drugs on hemodynamic parameters in dogs.			T	23.4	6.048	1.032
Muwer, Marc	Student	NEURON. Modeling of interactions of groups of neurons.			T	0.1	0.016	0.007
Otell, Robert	Student	CIS. Inactive			T	0.0	0.0	0.024
Peters, John	Student	BIOSTAT. Evaluation of residuals and outliers in parallel line assays and their effect on statistical analysis of clinical data.			T	1.2	0.245	0.006
Peterson, Daniel	Student	MODELIN. Formulation of comprehensive model for insulin metabolism in the human body.			T	71.2	44.729	1.425
Pope, Stephen	Student	AY21011. Cardiovascular function parameters of various pharmacologic agents.			T	0.3	0.053	0.332
Propper, Richard	Student	TEST1. Study of inter-relationship of angiogenesis and glucomedogenesis in the perfused rat kidney.			T	0.0	0.0	0.040
Raybin, Daniel	Student	ASSAYS. Calculation of enzyme assays and enzyme kinetics.			T	82.6	24.074	0.599
Rosenfeld, Ron	Student	CCIPSYCA. Study of psychophysiological adaptation of male patients to the Coronary Care Unit.			T	0.0	0.0	0.024
Rosenthal, William	Student	RESEARCH. Auditory processing in language deviant children; longitudinal study and follow-up of language deviant children.			T	20.2	5.516	0.744
Sachs, David	Student	POPCIT. Statistical analysis of questionnaires completed by newspaper reporters and editors on their attitudes and orientations toward environmental health issues.			T	197.4	80.769	13.766
Sack, Robert	Student	MASOCH. Item analysis of questionnaire to determine which questions best discriminate between normals and psychiatric patients; also cluster analysis for internally correlative items.			T	5.4	1.147	0.019
Saffin, Arthur	Histochemistry	ORALBIOL. Computer instruction in biostatistics for dental students.			T	40.6	14.492	0.454

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INVESTIGATOR	DEPARTMENT/ INSTITUTION	PROJECT TITLE	DIRECT GRANT OR CONTRACT SUPPORT		BRR Cate- gory*	AMOUNT OF USAGE - THE SHARING COMMITTEE	
			Identification Number	Agency Annual Amt.		Terminal Access Hours	Block Storage (K) Pageminutes (K) (Block = 1/2 bytes)
Category 4 (cont'd.)	Medical Students (FREE)						
Scandella, Carl	Student	GREASBAL. Study of modifications in the chemical structure of the cytoplasmic membrane of bacteria induced by viral infection.			T	0.2	@ \$.10 per block 0.735
Schwartz, Barry	Student	CELLCOUN. Analysis of Coulter Counter data for study of aging process at cellular level.			T	3.2	0.005
Sethi, Sarvan	Student	ISOTOPE. Replication of rhinoviruses in cell cultures.			T	0.4	0.086
Siever, Larry	Student	GRADIENT. Study of gradients of biogenic amines in the spinal cord cerebrospinal fluid.			T	6.3	4.182
Sinclair, Allen	Student	HEARTCEL. Measurement of intervals between beats of individual heart cells and administration of drugs to cells to change environmental conditions.			T	3.8	0.801
Spinelli, Nico	Psychiatry	COMPBIOB. Class account for "Computers in Biology and Medicine."			T	22.7	7.431
Sproul, Myrna	Student	FETAL. Data analysis for thesis project on relationship of maternal corticosteroids to the development of the fetal hypothalamic-pituitary-adrenal axis.			T	0.2	0.063
Svanson, George	Student	THESIS. Interpretation of therapeutic drug action on respiratory control.			C	578.6	394,999
Thomas, Hank	Student	AC DISP. Real time game putting players under pressure to make operational and economic decisions under a time constraint.			T	1.3	0.280
Wiskocil, Robert	Student	ULTRA. Study of enzyme mechanism of tryptophan synthesis using equilibrium dialysis technique.			T	0.0	0.0
Unknown Users	Mostly Students	SCRATCH. Minor use of the system without data storage.			T	890.2	298,525
						3373.4	1437.332
							128,300
Category 5 Realtime	Core Research (FREE)						
Reynolds, Walter	Genetics	DREAMS. DENDRAL: Mass spectra analysis and interpretation.			Cor	11.8	@ \$.005 per pageminute 3.398
Ross, Robert	Chemistry	CHEM. DENDRAL: Mass spectra analysis and interpretation.			Cor	5.6	1.646
Sere, Hiram	SIH - Pharmacy	ALERT. Drug interaction project, hospital pharmacy service.			Cor	0.0	0.0
							@ \$.10 per block 11.505
							9.885
							0.002

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April 17, 1971 - April 16, 1972

(105)

INVESTIGATOR	DEPARTMENT/ INSTITUTION	PROJECT TITLE	DIRECT GRANT OR CONTRACT SUPPORT		BRR Cate- gory*	AMOUNT OF USAGE - TIME SHARING COMPUTER	
			Identification Number	Agency Annual Amt.		Terminal Access Hours	Block Storage (K) Pageminutes (K) (Block=2K bytes)
<u>Category 5 (cont'd.) Realtime, Core Research (FREE)</u>							
Stillman, Robert	Chemistry	DREAMS. DENDRAL: Mass spectra analysis and interpretation.			Cor	39.3	@ \$.005 per pageminute 18.333 @ \$.10 per block 6.292
				SUB-TOTAL		56.7	26.684
<u>Category 6 Non-Realtime, Core Research (FREE)</u>							
Cohen, Stan	Clinical Pharmacology	DRUGALERT. Computerized system to warn of interactions of drugs administered to patients.			Cor	972.5	@ \$.01 per pageminute 786.461 @ \$.10 per block 68.211
Lederberg, Joshua	Genetics	PILOT1. Demonstration programs.			Cor	313.2	145.141 24.613
Lederberg, Joshua	Genetics	PILOT2. System testing and monitoring.			Cor	139.9	64.494 9.031
Reynolds, Walter	Genetics	DENDRAL: Mass spectra analysis and interpretation.			Cor	80.9	103.498 1.496
Foss, Robert	Chemistry	DENDRAL: Mass spectra analysis and interpretation.			Cor	146.2	181.503 2.783
Stefik, Mark	Genetics	DENDRAL: Mass spectra analysis and interpretation.			Cor	130.1	69.335 1.919
Stillman, Robert	Chemistry	DENDRAL: Mass spectra analysis and interpretation.			Cor	106.8	95.493 0.998
				SUB-TOTAL		1889.6	1445.925 109.051
<u>Category 7 Staff (FREE)</u>							
Bassett, Robert	ACME	ACMECONS. Applications program development; user consultation.			Cor	600.3	@ \$.01 per pageminute 198.308 @ \$.10 per block 6.391
Baxter, Erica	ACME	NOTES. Maintenance of ACME Note index and list of user publications.			Cor	45.0	17.416 6.169
Baxter, Erica	ACME	TRAINING. ACME user accounting records.			Cor	32.0	9.627 1.823
Becker, Sheldon	Computation Center	ACME. System development and testing.			Cor	0.8	0.470 0.018
Beebe, Robert	Computation Center	OS. System development and testing.			Cor	0.7	0.300 0.018
Berman, Joseph	ACME	RACME. System development and testing.			Cor	133.0	63.488 11.716
Berns, Robert	ACME	LISP. System development and testing.			Cor	30.5	45.675 3.717
Berns, Robert	ACME	DENDRAL. System development and testing.			Cor	75.4	136.881 14.392

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(106)

INVESTIGATOR	DEPARTMENT/ INSTITUTION	PROJECT TITLE	DIRECT GRANT OR CONTRACT SUPPORT		BRR Category*	AMOUNT OF USAGE - TIME SAVING COMPUTER	
			Identification Number	Agency		Terminal Access Hours	Block Storage (K) (5.664602 bytes)
Category 7	(cont'd.)	Staff (FREE)					
Briggs, Russell	ACME				Cor	178.4	84.837
Briggs, Russell	ACME				Cor	13.1	3.645
Brown, Byron	Biostatistics				T	59.9	14.364
Carr, Richard	Computation Center				Cor	1.4	0.750
Class, Charles	ACME				Cor	5523.5	3061.554
Copeland, Art	Computation Center				Cor	0.0	0.040
Cower, Rich	ACME				Cor	297.5	110.979
Crouse, Linda	ACME				Cor	33.7	8.980
Feigenbaum, Edward	Computation Center				Cor	0.0	0.024
Feigenbaum, Edward	Computation Center				Cor	0.0	0.132
Freret, Payne	ACME				Cor	193.5	71.457
Frey, Regina	ACME				Cor	92.1	42.976
George, Denise	Computation Center				Cor	0.0	0.024
Gold, Don	Computation Center				Cor	0.4	0.079
Grauer, Chuck	ACME				Cor	86.4	30.889
Hale, Robert	ACME				Cor	47.2	19.885
Hu, Jean	ACME				Cor	370.0	367.851
Hundley, Lee	ACME				Cor	318.1	122.221
Jamsgaard, Ron	ACME				Cor	65.0	25.275
Jamsgaard, Ron	ACME				Cor	0.0	0.0
Lederberg, Joshua	Genetics				Cor	0.0	0.0
Lederberg, Joshua	Genetics				Cor	8.2	3.273
Lederberg, Joshua	Genetics				Cor	45.7	14.086
Leong, Leon	ACME				Cor	36.1	24.787
Lev, Ying	ACME				Cor	104.8	35.532
Martin, Charles	Computation Center				Cor	0.3	0.059
Matheson, Russ	ACME				Cor	231.0	181.282

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(107)

INVESTIGATOR	DEPARTMENT/ INSTITUTION	PROJECT TITLE	DIRECT GRANT OR CONTRACT SUPPORT		RFR Cate- gory*	AMOUNT OF USAGE - PER PERIOD COMPUTED		
			Identification Number	Agency		Terminal Access Hours	Page-minutes/K* (Block=200 Lines)	Block Storage/K* (Block=200 Lines)
Category 7 (cont'd.)	Staff (FREE)						@ \$.01 per page-minute	@ \$.10 per block
Matous, James	ACME	GET. Daily operations.			Cor	8.2	3.618	0.603
Miller, Stu	ACME	ACME. System development and testing.			Cor	199.0	82.841	2.227
Montgomery, Richard	Computation Center	KP. Text editing.			Cor	0.0	0.0	0.024
Moore, James	Computation Center	OS. System development and testing.			Cor	0.0	0.0	0.020
Mozaki, Tom	ACME	ENGINEER. Engineering applications.			Cor	15.9	5.809	1.651
Osborne, De Wayne	ACME	ENGINEER. Engineering applications.			Cor	18.6	4.715	0.473
Pearson, Joan	Computation Center	OS. System development and testing.			Cor	0.0	0.0	0.020
Reynolds, Walter	Genetics	HQ. System development and testing.			Cor	62.1	34.804	3.213
Richardson, Ruth	Computation Center	OS. System development and testing.			Cor	0.0	0.0	0.020
Riegan, James	ACME	VAT. Daily operations.			Cor	50.6	18.191	0.267
Sanders, Bill	ACME	ASDEX. Hardware and software development.			Cor	0.7	0.507	2.671
Sanders, Gary	ACME	CONSULT. User consultations.			Cor	20.2	7.235	1.315
Sandoval, Charles	ACME	ACME. Daily operations.			Cor	0.8	0.213	0.696
Scharf, Guy	Computation Center	OS. System development and testing.			Cor	0.0	0.0	0.020
Stainton, Robert	ACME	SCC. System development and testing.			Cor	23.1	5.229	0.108
Stubbs, Bert	Computation Center	ENGINEER. Engineering applications.			Cor	0.0	0.0	0.024
Sutter, Jan	ACME	ACME. Daily operations.			Cor	95.9	21.643	8.509
Tice, Bernie	Computation Center	ACME. System development and testing.			Cor	0.0	0.0	0.020
Tribollet, Chuck	ACME	CAL. Development of computer-aided instruction for teaching PL/ACME.			Cor	110.0	43.776	0.793
Vallee, Jacques	Computation Center	DIRAC2. Automation of Stanford Blood Bank.			Cor	0.0	0.0	0.008
Vantassel, James	ACME	TEST. Daily operations.			Cor	12.7	3.080	0.120
Weyl, Steve	ACME	SAXYL. Applications program development.			Cor	40.3	24.094	0.046
Whitner, Jane	ACME	STATISTI. Statistical program development.			Cor	493.4	217.913	6.854
Whitner, Jane	ACME	STATTEST. Statistical program development.			Cor	0.0	0.0	0.732
Wholey, Anna	ACME	ACME. Development of applications programs.			Cor	0.0	0.0	0.012
Wiederhold, Gjo	ACME	TEST. System testing.			Cor	175.0	83.978	9.031
Wiederhold, Gjo	ACME	USAGE. Usage statistics, accounting and yearly reports.			Cor	0.4	0.093	8.724

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							Terminal Access Hours	Page-minutes (%) Page-minutes	Block Storage (%) Block Storage
Category 7 (cont'd.)	Staff (FREE)							@ \$.01 per page-minute	@ \$.10 per block
Wiederhold, Gio	ACME	CSEMP. Continuous system modeling program development.				Cor	0.4	0.081	4.163
Wiederhold, Gio	ACME	DEMO. Demonstration for ACME visitors.				Cor	65.6	17.539	4.164
Wiederhold, Voy	ACME	MANUAL. Maintenance of PL/ACME Manual.				Cor	97.9	43.925	20.369
Wilson, Don	ACME	ACME. Development of real-time medical applications.				Cor	0.0	0.0	1.964
ACME Staff	ACME	JQPUBLIC. Development and storage of PUBLIC files.				Cor	51.7	15.821	9.107
ACME Staff	ACME	I GRAH OPS. Graphics development.				Cor	0.5	0.182	0.845
ACME Systems Staff	ACME	PROGRAMS. Collection of systems programs.				Cor	23.3	9.815	0.516
IBM Customer Engineers	IBM	I CE TERMDIAG. Terminal testing and diagnosis.				Cor	112.0	30.590	0.830
PL/ACME Classes	ACME	PLACME. Practice programming for PL/ACME classes.			SUB-TOTAL	T	315.7	114.172	1.764
							10618.0	5486.790	277.833
Category 8 Hospital Data Processing (CHARGEABLE)								@ \$.0125 per page-minute	@ \$.10 per block
Barber, Vic	SUH - Data Processing	SUHDP. Accounting.		Hosp. Funds		S	1.8	0.523	0.036
Boyle, James	SUH - Clinics	CBO. Accounting.		Clinic Budget		S	344.9	294.220	18.556
					SUB-TOTAL		346.7	294.743	18.592
Category 10 Realtime, Pilot and Pending Proposal (FREE)								@ \$.005 per page-minute	@ \$.10 per block
Borison, Scott	Cardiovascular Surgery	FLOW. Simulation of physiological properties.				S	0.2	0.104	0.048
Bunnenberg, Edward	Chemistry	CHEM. Development of a magnetic circular dichroism biotechnology resources.				S	178.7	205.367	3.421
Kadis, Leslie	Anesthesia	VISAEP. Visual average evoked potential to graded light intensity as a correlate of pain threshold.				C	67.5	56.045	0.280
Roth, Walton	Psychiatry	AEP. Research into computer processing of EEG data.				S	29.4	18.831	0.662

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April 27, 1971 - April 16, 1972

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			Identification Number	Agency	Current Annual Amt.		Terminal Access Hours	Page-minutes (X) /Block = 6 Lines	@ \$.10 per block
Category 10 (cont'd.)	Realtime, Pilot and Pending Proposal (FREE)								
Sussman, Howard	SUR - Clin. Lab. Pathology	LABENG. Connection of a large analysis instrument in the Clinical Laboratory to the 1800 for data collection.				S	60.9	15,404	0.159
					SUB-TOTAL		336.7	295,751	4,570
Category 11	Non-Realtime, Pilot and Pending Proposal (FREE)								
Belt, Donald	Otolaryngology	HEAR. Collection and processing of hearing loss data.				S	2.4	0.539	0.036
Bunnenberg, Edward	Chemistry	CHEM. Development of a magnetic circular dichroism biotechnology resource.				S	52.3	27,754	4,195
Butler, Edmund	Urology	UROSTATS. Urology operative statistics information and retrieval program.				S	9.6	7,254	0.833
Cavalli, Luca	Genetics	PAVIA. Population genetics: evolutionary rate, patterns of inheritance in behavioral traits, analysis of record linkage and pedigree information.				S	126.4	64,750	2,467
Costell, Ronald	Psychiatry	AHSO. Analysis and statistical testing of factors of significance in the sexual histories of sex offenders.				S	14.0	3,688	0.383
Eddy, David	Engineering	NIFTY. Use of a Markov model of coronary artery disease for optimum treatment decision.				S	12.0	4,854	0.046
Goldstein, Avram	Pharmacology	OFFSTUFF. Study of methadone maintenance program for heroin addicts.				S	38.4	53,662	1,137
Leiderman, P. Herbert	Psychiatry	KENYA. Analysis of data collected in Kenya, relating the effect of social structure of primary family on infants' social attachments in the first year of life.				S	57.7	20,818	1,291
					SUB-TOTAL		312.8	183,319	10,378
Category 12	Extended Non-Funded (FREE)								
Cady, Paxton	Psychiatry	THYROID. Study of the relationship between stress and a partial genetic defect in thyroid function.				S	0.0	0.0	12,212
Constantinou, Christos	Urology	UROL. Investigation of upper urinary tract physiology.				C	394.1	237,597	2,537
Govan, Duncan	Urology	PARAQAD. Urologic evaluation management and clinical follow-up of patients with spinal cord injury or disease.				S	0.0	0.0	0,281
					SUB-TOTAL		394.1	237,597	15,030

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April 17, 1911 - April 16, 1912

Time scheduled for users	6595 hrs.
Time not available to users due to failures	112.3 hrs.
Percentage of scheduled time not available to users	1.7 %

[illegible]

IX. PUBLICATIONS

A.
Published in Regularly Scheduled Periodicals During Fiscal 1972

Ammerman, A., and L.L. Cavalli-Sforza, "Measuring the Rate of Spread of Early Farming in Europe," MAN, Vol. 6, pp. 674-688, December 1971.

Chester, T., P. DeClercq, and T. Merigan, "PolyrI, PolyrC and Antibody, Interferon, and Phagcytosis," INFECTION AND IMMUNITY, April 1971.

Glaze, H.J., Jr., and E. Dong, "Vagal Control of Heart Rate," in Abstracts of the American Heart Association, 44th Scientific Sessions, Supplement II to CIRCULATION, Vol. XLIV, October 1971.

Glick, D., K. Marich, J. Orenberg, P. Carr, and D. Miller, "Effect of Atmosphere on Spectral Emission from Plasmas Generated by the Laser Microprobe," ANALYTICAL CHEMISTRY, Vol. 43, pp. 1452-1456, September 1971.

Ingels, N.B., Jr., G.T. Daughters, II, S.R. Davies, and I.B. MacDonald, "Stereo Photogrammetric Studies on the Dynamic Geometry of the Canine Left Ventricular Epicardium," J. BIOMECHANICS, Vol. 4, pp. 541-550, 1971.

Kaplan, B.E., J.C. Corby, and P.H. Leiderman, "Attention and Verbalization: Differential Responsivity of Cardiovascular and Electrodermal Systems," JOURNAL OF PSYCHOSOMATIC RESEARCH, Vol. 15, pp. 323-328, 1971.

Levine, R. and N. Kretchmer, "Conversion of Carbamyl Phosphate to Hydroxyurea: An Assay for Carbamyl Phosphate Synthetase," ANALYTICAL BIOCHEMISTRY, Vol. 42, No. 2, pp. 324-337, August 1971.

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(123)

APPENDIX A

Summary of Campus/ACME Merger Study

The study of this potential merger has been limited to five specific areas:

- The capacity of the 360/67 to absorb the ACME load;
- An overview of services and cost considerations;
- A brief statement of the planned changes to the Campus Facility;
- A list of relative advantages and disadvantages of such a merger; and
- Comments on cost comparisons.

There follows a summary of considerations in these five areas.

360/67 Capacity:

In July a test was conducted to determine whether the 360/67 timesharing monitor called ORVYL could handle its current load plus ACME's current load plus the anticipated load associated with the new information retrieval system called SPIRES. The test indicated that the 360/67 had adequate cycles and performance capability to handle the anticipated SPIRES load plus a substantial ACME load based on current ACME usage levels. The 360/67 has considerable unused capacity today. The test of ORVYL capacity demonstrated that a considerably heavier load could be handled with acceptable degradation and response times to the user. The test did tax the capability of the system with respect to its paging system on the drums; but this was fully expected. The ACME portion of the test appeared to consume approximately 29 per cent of the 360/67 cycles. The simulation of the ACME load consisted of a series of FORTRAN routines which would require cycles corresponding to approximately 15 users in execution on the current ACME hardware (360/50 with 2 megabytes of 8 micro-second bulk core).

Overview of Service and Cost Considerations:

The Campus Facility provides the following services: production batch service, quick partition batch service, timesharing in at least three languages, text editing, (one of the best found anywhere), plotting, and remote job entry. Many languages are supported in the production batch partition. Rates for use of the system have been designed to remove administrative fiat with respect to scheduling of resource utilization. Thus, priority can be obtained by any user who is willing to pay a fee. No realtime support services are offered at the present time, although there is limited small machine support through the PDP-9.

Card readers are handled by both computer operators and users. Fast printing service is available and normally the turn around time is extremely good (a few minutes). Terminal services are normally offered between 8 a.m. and 1:00 a.m. except for brief periods of system staff time from 5 to 8 p.m. three days per week, plus some system time on weekends.

Comments On Planned Changes:

The Campus Facility is likely to acquire some new hardware by January 1973. The new hardware could either replace existing systems or could supplement them. For example, a fast batch engine could be acquired to support the current 360/67 services. It is essential that any potential hardware changes in the Campus Facility be capable of demonstrating cost effectiveness. Operations over the past 4 years have led to an approximate \$600,000 deficit. It is hoped that user fees and cost reductions over the next couple of years can remove the deficit. The Campus Facility anticipates having the SPIRES Information Retrieval System operating for users within the next year. This new service will fill a major need. The library automation system BALLOTS developed in the environment provided by SPIRES and ORVYL is being developed and has the University Large Library Commitment. Some of the planned changes on the 360/67 entail optimizing the systems which are presently run there. A major new service to be offered by the Campus Facility will be an interactive version of a subset of the PL/1 language. This will be especially interesting to users of the current ACME system.

Advantages of Potential Merger:

- 1) Availability of an increased range of services to the Medical School users, including batch service and additional languages;
- 2) Participation in the system which the University is committed to support would increase the financial support available for computing. The University Computing Fund used for unsponsored research and student computing has been running approximately \$700,000 per year. The Medical School use of such funding has been limited to approximately \$15,000 per year, primarily due to the availability of ACME. The University's Computing funds have been declared to be unavailable for use on the ACME system since the primary focus of the University must rest with the support of a central system;
- 3) Data bases could be easily shared among various disciplines within the University;
- 4) The new SPIRES Information Retrieval facility would be available to medical users;
- 5) The service center would not be totally dependent upon one source of funding such as NIH with respect to medical funding. Thus it would be less sensitive to use by a single group of users;
- 6) There may be long term advantages associated with economy of scale with respect to hardware, staffing, and physical plant;
- 7) The Medical School would not have to assume full financial responsibility for a sizable computing facility such as ACME; the risk would be shared among all schools within the University for a central facility.

Disadvantages of the Potential Merger:

- 1) The realtime services which already exist on the ACME system do not exist on the Campus Facility. ACME is currently attempting to develop a real time support system which would be host-machine independent. Campus Facility may add it as a service.
- 2) ACME type service has a strong personal relationship quality which may be more difficult to attain in a system shared by several thousand users;